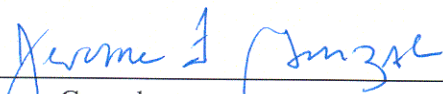
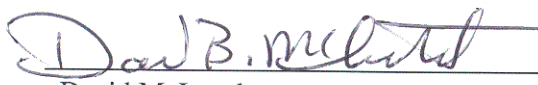


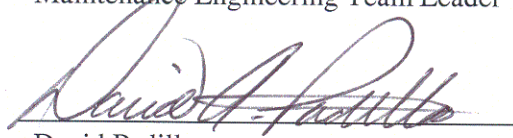
CRITERION 303

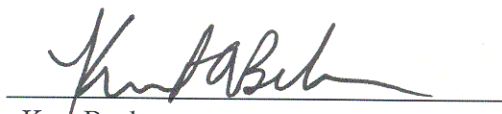
UTILITY DISCONNECTS

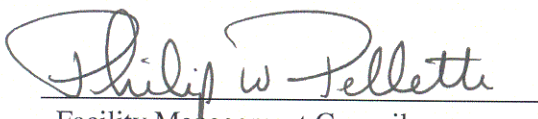
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RECORD OF REVISIONS

Revision No.	Date	Description
0	12/06/02	Initial Issue

TABLE OF CONTENTS

1.0	PURPOSE.....	1
2.0	SCOPE.....	1
3.0	ACRONYMS AND DEFINITIONS.....	1
3.1	Acronyms	1
3.2	Definitions	2
4.0	RESPONSIBILITIES	3
4.2	FWO Utilities And Infrastructure (UI) (FMU-80)	3
4.3	Facility Manager.....	3
4.4	Group Leader	4
4.5	SSS Utilities Department.....	4
4.6	Authority Having Jurisdiction (AHJ) - POCs for Mechanical and Electrical Chapter of LANL Engineering Manual.....	4
5.0	PRECAUTIONS AND LIMITATIONS	4
5.1	Precautions	4
5.2	Limitations	5
6.0	REQUIREMENTS	5
6.1	Operations Requirements	5
6.2	Maintenance Requirements	7
6.3	Materials Requirements	7
7.0	RECOMMENDATIONS AND GOOD PRACTICES	8
7.1	Operations Recommendations	8
7.2	Maintenance Recommendations	8
8.0	GUIDANCE	9
8.1	Operations Guidance	9
8.2	Maintenance Guidance	9
9.0	REQUIRED DOCUMENTATION.....	9
10.0	REFERENCES	9
11.0	APPENDICES	10

CRITERION 303**UTILITY DISCONNECTS****1.0 PURPOSE**

The purpose of this Criterion is to establish the minimum requirements and best practices for Utility Disconnects at LANL. This document is intended so that the owner of the utility system, Facility and Waste Operations-Utilities and Infrastructure (FWO-UI), ensures that a safe shutdown of utility systems no longer in use is implemented.

This document addresses the requirements of LIR 230-05-01(Ref 10.1), "Operations and Maintenance Manual."

Implementation of these requirements and recommendations satisfies DOE Order 430.1A (Ref. 10.2), "Life Cycle Asset Management," Attachment 2 "Contractor Requirements Document," Paragraph 2, Sections A through C, which in part require UC to "...maintain physical assets in a condition suitable for their intended purpose" and employ "preventive, predictive, and corrective maintenance to ensure physical asset availability for planned use and/or proper disposition." Compliance with DOE Order 430.1A is required by Appendix G of the UC Contract.

2.0 SCOPE

The scope of this Criterion applies to disconnects of services from utility systems supplying a building, a series of buildings, or structure(s). Utility systems include electric >600VAC, natural gas, water, sanitary wastewater, steam systems, and Fire Protection Systems to the point of disconnect, unless otherwise defined in a memorandum of understanding (MOU). The scope of this Criterion does not apply to telecommunications disconnects. If a telecommunications disconnect is necessary contact the LANL Computer, Communications and Networking Telecommunications Group (CCN-4) customer service representative.

3.0 ACRONYMS AND DEFINITIONS**3.1 Acronyms**

AHJ	Authority Having Jurisdiction
CFR	Code of Federal Regulations
DOE	Department of Energy

FMU	Facility Management Unit
LEM	LANL Engineering Manual
LIG	Laboratory Implementing Guidance
LIR	Laboratory Implementing Requirement
LPR	Laboratory Performance Requirement
O&M	Operations and Maintenance
PPE	Personal Protective Equipment
PP&PE	Personal Property and Programmatic Equipment
RP&IE	Real Property and Installed Equipment
SSS	Support Services Subcontractor
SSC	Structures, Systems, and Components
UC	University of California

3.2 Definitions

Contractor: Person or businesses that contracts to perform light or heavy construction for LANL. This also applies to the SSS Construction branch.

Points of Disconnect:

1. **Water Distribution**
 - **Potable:** From the service valve on the main water line supplying the building or structure.
 - **Fire Protection:** Same as potable water (see above).
2. **Sanitary Wastewater Utility System**
 - From the sanitary wastewater manhole or main sanitary wastewater line supplying the building or structure.
3. **Natural Gas Distribution**
 - From the service valve on the main natural gas line supplying the building(s) or structure(s).
4. **Steam Distribution**
 - From the outlet of the steam service valve in the utility steam manhole to the exterior wall of the building being removed from service or the exterior wall of the steam manhole containing pressure reducing valves for the disconnected building.
5. **Condensate Distribution**
 - From the outlet of the steam service valve in the utility steam manhole to the exterior wall of the building being removed from service or the

exterior wall of the steam manhole containing pressure reducing valves for the disconnected building.

6. **Electrical**

- From the transformer secondary 480V main breaker for all 13.8kV/480V delivery points.

4.0 RESPONSIBILITIES

- 4.1.1** FWO-SEM is responsible for the administrative content of this Criterion and monitoring the applicability and the implementation status of this Criteria and either assisting the organizations that are not applying or meeting the implementation expectations contained herein or elevating their concerns to the director(s).

Basis: LIR 301-00-01.11; Issuing and Managing Laboratory Operations Implementation Requirements and Guidance, Section 5.4, OIC Implementation Requirements.

- 4.1.2** FWO-SEM shall provide technical assistance to support implementation of this Criterion.

4.2 FWO Utilities And Infrastructure (UI) (FMU-80)

- 4.2.1** FWO-UI is responsible for the technical content of this Criterion and monitoring the applicability and the implementation status of this Criteria and either assisting the organizations that are not applying or meeting the implementation expectations contained herein or elevating their concerns to the director(s).

Basis: LIR 301-00-01.11; Issuing and Managing Laboratory Operations Implementation Requirements and Guidance, Section 5.4, OIC Implementation Requirements.

- 4.2.2** FWO-UI shall provide technical assistance to support implementation of this Criterion.

- 4.2.3** FWO-UI has overall responsibility to support the Laboratory with reliable, safe, and cost effective utilities (Natural Gas, Steam/Condensate, Electrical, Water, and Sanitary Wastewater).

4.3 Facility Manager

- 4.3.1** Responsible for operations and maintenance of institutional, or Real Property and Installed Equipment (RP&IE) under their jurisdiction, in accordance with the requirements of this document.

- 4.3.2** Responsible for operations and maintenance of those Personal Property and Programmatic Equipment (PP&PE) systems and equipment addressed by this document that may be assigned to the FM in accordance with the FMU-specific Facility/Tenant Agreement.
- 4.3.3** Responsible for notifying FWO-UI and SSS Utility Department of plans to vacate buildings and structures that are served by utility systems. The facility manager is also responsible for funding costs to disconnect utility services.

4.4 Group Leader

- 4.4.1** Responsible for operations and maintenance of those Personal Property and Programmatic Equipment (PP&PE) systems and equipment addressed by this document that are under their jurisdiction
- 4.4.2** Responsible for system performance analysis and subsequent replacement or refurbishment of assigned PP&PE.

4.5 SSS Utilities Department

- 4.5.1** Has the responsibility to operate and maintain the water, wastewater, natural gas, steam/condensate, and electric utility systems and to make final utility disconnects, as defined in this document.
- 4.5.2** SSS Utilities Department is responsible for ensuring that appropriate SSS personnel are trained and certified to perform the work.

4.6 Authority Having Jurisdiction (AHJ) - POCs for Mechanical and Electrical Chapter of LANL Engineering Manual

The AHJ is responsible for providing a decision on a specific technical question regarding this criterion.

5.0 PRECAUTIONS AND LIMITATIONS

5.1 Precautions

This section is not intended to identify all applicable precautions necessary for implementation of this Criterion. A compilation of all applicable precautions shall be contained in the implementing procedure(s) or work control authorization documents. The following precautions are intended only to assist the author of a procedure or work control document in the identification of hazards/precautions that may not be immediately obvious.

Nuclear facilities and certain high hazard facilities (e.g. high explosive operations) may have additional facility specific requirements beyond those presented in this

Criterion which are contained in the Safety Analysis Report (SAR), Technical Safety Requirements (TSR), or facility safety plans, as applicable.

- 5.1.1** Impairments and disconnects to Fire Protection Systems are to be coordinated with the LANL Fire Protection Group and are also addressed under O & M Criterion 733.

5.2 Limitations

The intent of this Criterion is to identify the minimum generic requirements and recommendations for SSC operation and maintenance across the Laboratory. Each user is responsible for the identification and implementation of additional facility specific requirements and recommendations based on their authorization basis and unique equipment and conditions, (e.g., equipment history, manufacturer warranties, operating environment, vendor O&M requirements and guidance, etc.).

Nuclear facilities and moderate to high hazard non-nuclear facilities will typically have additional facility-specific requirements beyond those presented in this Criterion. Nuclear facilities shall implement the requirements of DOE Order 4330.4B (Ref. 10.3) as the minimum programmatic requirements for a maintenance program. Additional requirements and recommendations for SSC operation and maintenance may be necessary to fully comply with the current DOE Order or CFR identified above.

6.0 REQUIREMENTS

Minimum requirements that Criterion users shall follow are specified in this section. Requested variances to these requirements shall be prepared and submitted to FWO-SEM in accordance with LIR 301-00-02 (Ref. 10.4), "Variances and Exceptions to Laboratory Operations Requirements," for review and approval. The Criterion users are responsible for analysis of operational performance and SSC replacement or refurbishment based on this analysis. Laws, codes, contractual requirements, engineering judgment, safety matters, and operations and maintenance experience drive the requirements contained in this section.

6.1 Operations Requirements

- 6.1.1** SSS Utilities Department must comply with the following procedures when performing disconnects:

Potable Water Piping:

UOI #64-00-115, Maintenance of the Water Distribution System,
LANL Construction Specifications
Manual Section 15140.

**Sanitary Wastewater Sewer
Utility System:**

New Mexico Environment Department
Certification & Permit Requirements,
LANL Construction Specifications
Manual Sections 15150 & 15470.

Natural Gas:

49 CFR Parts 192 & 195,
LANL Construction Specifications
Manual Section 15195,
UOI #67-00-043, Construction and
Installation of Natural Gas System.

Electric:

LANL Construction Specifications
Manual Section 16120,
UOI #63-00-190, Switching Procedures,
UOI #63-00-191, Switching Procedures
Involving Outside Contractors,
JCNNM HS&E Manual S-8,
Electrical – Performing Work Near LANL
Transmission & Distribution Systems.

Steam Distribution Piping:

LANL Construction Specifications
Manual Section 15525,
UOI #66-00-060, Operation of Steam
Service Lines & Steam Distribution
Systems.

**Condensate Distribution
Piping:**

LANL Construction Specifications
Manual Section 15525,
UOI #66-00-060, Operation of Steam
Service Lines & Steam Distribution
Systems.

Fire Protection Systems:

LANL Operating and Maintenance
Manual Criterion 733,
LANL Configuration Manual Sections
13930, 13935, 13950, 13955, 16721, and
16722.

Basis: LANL Work Smart Standards, JCNNM HS&E Manual S-19, Hazard
Analysis & Control for Facility Work, LANL Facilities Construction
Specifications Manual Section 02220, JCNNM AP 70-10-003,
Excavation Requirements – Permit Process Requirements & Safety
Program.

6.2 Maintenance Requirements

No requirements beyond those stated in section 5.2, Limitations.

6.2.1 Annual Inspections

None.

6.2.2 Pre-Operational Inspections

None.

6.3 Materials Requirements

SSS Utility Department provides all materials required for the utility disconnects, and performs the necessary excavation and work required to prepare the area for the disconnect in accordance with applicable procedures and regulations.

Potable Water Piping: LANL Construction Specifications, Section 15140.

Sanitary Wastewater Sewer Utility System: LANL Construction Specifications, Section 15150.

Natural Gas: LANL Construction Specifications, Section 15195.

Electric: ANSI Standards, IEEE Standards,
LANL Construction Specifications, Sections 16140 & 16190.

Distribution Piping: LANL Construction Specifications Section 15525,
UOI #66-00-150, Steam Distribution Lines.

Condensate Distribution Piping: LANL Construction Specifications, Section 15525,
UOI #66-00-150, Steam Distribution Lines.

Basis: LANL Facilities Construction Specifications Manual Section 01600

6.3.1 The SSS Utilities Department furnishes the necessary special equipment, e.g., stoppel and bypass machines, and makes of all the following disconnects in accordance with the above requirements.

- Water Disconnects.
- Sanitary Wastewater Disconnects.
- Natural Gas Disconnects.
- Steam/Condensate Disconnects.
- Electrical Disconnects.

6.3.2 Planned Utility Outage.

The facility manager along with the SSS Utility Department shall plan utility outages to minimize the impact on users whose facilities and equipment may be affected. Comply with the Operations and Maintenance Criterion 301, Planned Utility Outage.

6.3.3 Emergency Utility Outage

The Facility Manager shall provide access and facility support to the SSS Utility personnel to disconnect utility system(s) that are deemed unsafe and may disrupt the overall LANL utility system.

6.3.4 Disinfection

The SSS Utility Department shall disinfect water-piping systems in accordance with the LANL Facility Construction Specifications, Section 15470, Disinfection of Water Piping.

6.3.5 Notification

Facility Managers are responsible for notifying FWO-UI of any proposed disconnects to the utility system. Notification should be as soon as possible in the process.

6.3.6 Inspection

The SSS Utility Department shall notify FWO-UI at least 24 hours in advance to inspect the utility disconnect. FWO-UI will ensure that the utility has been properly disconnected.

7.0 RECOMMENDATIONS AND GOOD PRACTICES

The information provided in this section is recommended based on acceptable industry practices and should be implemented by each user based on his/her unique application and operating history of the subject systems/equipment.

Building Managers should check building systems that may be affected by the disconnect so that the appropriate users are notified.

7.1 Operations Recommendations

No recommendations beyond those stated in Section 5.2, Limitations.

7.2 Maintenance Recommendations

No recommendations beyond those stated in Section 5.2, Limitations.

8.0 GUIDANCE

8.1 Operations Guidance

No implementation guidance available.

8.2 Maintenance Guidance

No implementation guidance available.

9.0 REQUIRED DOCUMENTATION

Maintenance history shall be maintained by FWO-UI for planned utility outages to include, as a minimum, the parameters listed in the Table 9-1 below:

Table 9-1 Documentation Parameters

MAINTENANCE HISTORY DOCUMENTATION PARAMETERS				
PARAMETER	ML 1	ML 2	ML 3	ML 4
Maintenance Activities				
Repair / Adjustments	NA	NA	NA	NA
PM Activities	NA	NA	NA	NA
Equipment Problems				
Failure Dates	NA	NA	NA	NA
Failure Root Cause	NA	NA	NA	NA
Inspection Results				
Inspection Date	NA	NA	NA	NA
SSC Condition	NA	NA	NA	NA

Basis: Documentation of the parameters listed in Table 9-1 above satisfies the requirements of LPR 230-07-00, Criteria 2, (Ref. 10.5) which states; “Maintenance activities, equipment problems, and inspection and test results are documented.”

10.0 REFERENCES

The following references, and associated revisions, were used in the development of this document.

10.1 LIR 230-05-01.0, Operation and Maintenance Manual.

Criterion 303: Utility Disconnects

Date: 12/06/02

Revision 0

- 10.2** DOE O 430.1A, Attachment 2 “Contractor Requirements Document” (Paragraph 2, Sections A through C), a requirement of Appendix G of the UC Contract.
- 10.3** DOE Order 4330.4B, Maintenance Management Program, Section 3.4.9.
- 10.4** LIR 301-00-02.0, Variances and Exceptions to Laboratory Operation Requirements.
- 10.5** LPR 230-07-00, Maintenance History, Performance Criteria [2].
- 10.6** Criterion 301, Operations and Maintenance, Planned Utility Outage.
- 10.7** 49 CFR Part 192.

11.0 APPENDICES

None.